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Tyco Docket No. 18060
(20958-2113)IN THE CLAIMS

1. (currently amended) A connector insertion and removal tool for inserting and removing an electrical connector onto and from an electrical system including a circuit board having opposite first and second surfaces, and at least one electrical connector therefor, said tool comprising:

~~a first portion~~ an installation mechanism configured for coupling to be positioned proximate the ~~a first surface of the circuit board;~~ and

~~a second portion~~ an extraction mechanism ~~configured~~ configured for coupling to said first portion to be positioned proximate to an opposite ~~the second surface of the circuit board,~~ said installation and extractor mechanisms being coupled to one another;

wherein at least one of said ~~first portion and said second portion~~ installation and extraction mechanisms comprises an actuator adapted for movement toward and away from said the circuit board to ~~contact at least a portion of said insert and remove the connector onto and from the circuit board.~~

2. (currently amended) A tool in accordance with Claim 1 wherein said installation mechanism and said ~~each of said first portion and said second portion include an actuator~~ include a groove and rib combination extending toward the first surface to guide said actuator adapted for movement toward and away from said the circuit board during insertion of the ~~to contact at least a portion of said connector.~~

3. (currently amended) A tool in accordance with Claim 1 wherein the ~~motherboard~~ circuit board includes ~~an a~~ a pin aperture field, said actuator comprising a plurality of extraction pins aligning with and extending into ~~corresponding to~~ the pin aperture field on the second surface of the circuit board to remove the connector from the first surface of the circuit board.

4. (currently amended) A tool in accordance with Claim 1 further comprising at least one guide pin, said guide pin engaged to said ~~first portion on one side~~ installation mechanism on the first surface of the circuit board and engaged to said ~~second portion~~ extraction mechanism on the other second side of the circuit board.

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5. (currently amended) A tool in accordance with Claim 4 wherein said extraction mechanism includes support plates holding said actuator therebetween, said support plates being held stationary against the second surface of the circuit board while the actuator moves toward and away from the circuit board,~~said at least one board guide pin comprises a first end having a first threaded portion and a second end having a second threaded portion, said first and second threaded portions different from one another.~~

6. (original) A tool in accordance with Claim 1 further comprising nonconductive sections situated adjacent said actuator, thereby avoiding a conductive path through said tool.

7. (currently amended) A tool in accordance with Claim 1 wherein said at least one of said ~~first portion~~installation mechanism and said ~~second portion~~extraction mechanism comprises an alignment member configured to position the electrical connector with respect to a pin aperture field in the ~~motherboard~~ circuit board.

8. (currently amended) A tool in accordance with Claim 1 wherein ~~said at least one each~~ of said installation mechanism first portion and said extraction mechanism second portion comprises a plurality of modular blocks mounted on and held stationary with respect to the circuit board thereto, and at least one movable block configured to move toward and away from the ~~motherboard~~ circuit board.

9. (currently amended) A tool in accordance with Claim 1 wherein said at least one said extraction mechanism first portion and said extraction mechanism second portion comprises a positioning plate configured for sliding engagement with a guide track.

10. (currently amended) A connector insertion and removal tool for inserting and removing an electrical connector onto and from an electrical system including a circuit board having opposed first and second surfaces and at least one electrical connector therefor, said tool comprising:

a first portion configured for coupling to the a first surface of the circuit board and comprising a first actuator, said first actuator movable toward said the first surface of

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~~the~~ circuit board to disengage ~~the~~ a first connector from the second surface of the circuit board, said first actuator movable away from ~~said~~ the circuit board to permit engagement of ~~the~~ a second connector to the second surface of the circuit board; and

a second portion ~~configured for coupling~~ to said first portion, said second portion configured to be located proximate the ~~extending over~~ a second surface of the circuit board, ~~opposite the first surface~~, said second portion comprising a second actuator, said second actuator movable toward ~~said~~ the second surface of the circuit board to engage the second connector to the circuit board, and said second actuator ~~block~~ movable away from the ~~said~~ circuit board to permit disengagement of the first connector from the circuit board.

11. (original) A tool in accordance with Claim 10 further comprising a guide pin insertable through the circuit board, said first portion and said second portion engaged to said guide pin on opposite sides of the circuit board.

12. (original) A tool in accordance with Claim 11 wherein said first portion comprises a first alignment member for engaging a first portion of said guide pin, and said second portion comprising a second alignment member for engaging a second portion of said guide pin.

13. (currently amended) A tool in accordance with Claim 10 wherein each of said first and second portions comprises modular blocks, at least some of said modular blocks being nonconductive.

14. (currently amended) A tool in accordance with Claim 10, at least one of said first portion and said second portion comprising a positioning plate, said positioning plate slidably engaged to a guide track to align the connector and the ~~motherboard~~ circuit board.

15. (original) A tool in accordance with Claim 10 wherein said first actuator comprises an actuator block comprising a plurality of extraction pins.

16. (currently amended) A connector insertion and removal tool for inserting and removing an electrical connector onto and from an electrical system including a

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circuit board having opposed first and second surfaces, and at least one electrical connector therefor, said tool comprising:

a first portion comprising a first plurality of modular blocks, said first plurality of modular blocks comprising a first pair of stationary alignment blocks configured ~~for coupling to be held stationary against the~~ a first surface of the circuit board, a first movable actuator block movable toward the first surface of the said circuit board to disengage ~~the~~ a first connector from the surface of the circuit board and movable away from ~~said the~~ circuit board to permit engagement of ~~the~~ a second connector to the circuit board; ~~and at least one first insulative spacer block to prevent completion of a conductive path through the first portion; and~~

a second portion comprising a second plurality of modular blocks, said second plurality of modular blocks comprising at least a second pair of stationary alignment blocks configured to be held stationary against the second surface of the circuit board, ~~for coupling to said first pair of alignment blocks~~, a second movable actuator block movable toward ~~said the~~ the second surface of the circuit board to engage the second connector to the circuit board and movable away from ~~the~~ said circuit board to permit disengagement of the first connector from the circuit board. ~~and at least one second insulative spacer block to prevent completion of a conductive path through the second portion.~~

17. (original) A tool in accordance with Claim 16 further comprising a pair of guide pins, each of said first pair of alignment blocks and said second pair of alignment blocks configured to engage one end of said guide pins.

18. (original) A tool in accordance with Claim 16 further comprising a pair of guide pins, each of said first pair of alignment blocks and said second pair of alignment blocks comprising a pair of alignment members extending therethrough and configured to engage a portion of said guide pins.

19. (currently amended) A tool in accordance with Claim 16 wherein said first movable actuator comprises a plurality of extraction pins that extend into a pin aperture field on the first surface to force the first connector from the second surface.

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20. (original) A tool in accordance with Claim 16 further comprising a pair of guide pins connecting said first portion and said second portion, each of said guide pins having a first ends having a first threaded portion and a second end having a second threaded portion, said first threaded portion being different from said second threaded portion.

21. (original) A tool in accordance with claim 20 wherein a portions of said first threaded portion is removed, thereby preventing threads of said first threaded portion from engaging a complementary threaded alignment member.